The Science of Analogy

Methodological Foundations and Illustrations of the Functional Anatomy of Analogous Developmental Processes

Martin Euser

June, 2026

Summary

This article proposes a "science of analogy" that treats analogies not as loose metaphors but as hypotheses of functional isomorphism across domains. Working within the World Soul metamodel, it formulates an explicit ontology of seven foci and invariant triadic operations that structure developmental processes through phases of impulse, differentiation, regulation, expansion, association and fulfillment. The first part develops axioms, four guiding questions and five methodological requirements for scientifically responsible analogies, stressing synoptic comparison of whole patterns, dynamic mapping of transitions, and the necessity of stabilizing feedback loops, predictive power and diagnostic usefulness. The second part illustrates the model across enterprise development, the Hero's Journey, alchemy, child and ego development, metabolism, neurobiology and macro-evolution. In each case, the same functional "anatomy" appears in different semantic dress. The conclusion highlights limits and pitfalls—overextension, semantic confusion, confirmation bias—and sketches a research program of tighter case studies and systematic comparison, arguing that the ultimate test of this science lies in its explanatory, diagnostic and predictive value.

Table of Contents

1. Introduction
2. Why a Science of Analogy?
3. Philosophical Foundation: Analysis, Synopsis, and Synthesis
4. Axioms of the World Soul Metamodel
5. Four Fundamental Questions for Analogical Research
6. Five Requirements for a Scientific Analogy
   - 6.1 Ontological or Structural Basis
   - 6.2 Synoptic Overview of the Whole
   - 6.3 Dynamic and Operational Mapping
   - 6.4 Stabilizing Feedback Loops
   - 6.5 Predictive and Diagnostic Value
7. The Seven Foci as Functional Architecture
8. Triads as Invariant Mechanisms
9. Syntax and Semantics: The Differentiation of Sub-Principles
10. Functional Anatomy of Developmental Processes
11. Illustration I: Enterprise Development (Bernard Lievegoed)
12. Illustration II: The Hero's Journey
13. Illustration III: Alchemical Transformation

14. Illustration IV: Child Development from Baby to Adult
15. Illustration V: Ego Development, Autonomy, and Value Shifts
16. Illustration VI: Metabolism and the Processing of Ideas
17. Illustration VII: Hemispheres, Phase 5, and the Leap to Phase 6
18. The Tetralemma and the Place of Paradox
19. What Makes Two Processes Truly Analogous?
20. Limits and Pitfalls of Analogical Research
21. Diagnostic and Predictive Power
22. Towards a Research Program
23. Conclusion

Appendices

- Appendix A: Child Development from Baby to Adult
- Appendix B: Triadic Operations Across Stages and Phases
- Appendix C: Neurobiological and Evolutionary Extensions
- Appendix D: Tetralemma and Positional Logic

1. Introduction

Modern science has achieved immense success through analysis, specialization, and reductionist methods. Yet that very success has often come at the price of losing sight of living wholes, developmental arcs, and recurrent ordering patterns that connect different fields. As disciplines fragment into ever narrower domains,

the need grows for a methodology capable of tracing connections without collapsing into vague holism or superficial metaphor.

The proposal of a science of analogy seeks to meet precisely this need. Its claim is not that everything resembles everything else, but that certain processes, across different scales, unfold according to the same functional architecture. Analogy, in this view, is not a poetic comparison but a hypothesis: that similar relations between impulse, differentiation, regulation, expansion, association, and fulfillment are active on multiple levels.

Within the World Soul metamodel[1], this architecture is described in terms of seven foci. These foci should not be equated with simple linear stages. They are better understood as transforming centres or stations of influence whose combined operations dominate particular phases of development. A process may indeed unfold along a sevenfold arc, but within each phase several foci may be active at once, and sub-phases and recursive patterns may emerge.

The present article has two main aims. First, it offers a methodological framework for determining when an analogy may be considered scientifically responsible. Second, it develops a series of illustrations of the functional anatomy of analogous developmental processes, in order to show how the same foci-architecture clothes itself differently in different domains.

2. Why a Science of Analogy?

1 For an extensive overview of the metamodel, see my articles on the World Soul and its seven centers of operation, parts 1-5 and the series on the Fourfold Logic in the model. All are available for download at archive.org and academia.edu

A science of analogy becomes necessary once it is recognized that many existing models partially overlap, while their mutual relations remain poorly understood. Developmental stages are described in numerous disciplines: embryology, organizational theory, ego psychology, myth, learning theory, and spiritual transformation. These models often display strikingly similar structures, yet it remains unclear whether this similarity is coincidental, culturally transmitted, or indicative of deeper structural regularities.

Discussion in this area typically oscillates between two extremes. On the one hand, such parallels are dismissed as speculative and unscientific. On the other, they are embraced too quickly as symbolic correspondences, without clear criteria of validity, scope, or testability. A science of analogy must therefore be both stricter and more generous: stricter in its methodological demands, yet more generous in its willingness to hold apparently distant domains together within a single synoptic view.

Within the World Soul model, such a synoptic view is not optional but essential. The model begins from the idea that natural processes are not isolated mechanisms, but expressions of an underlying holarchic order in which levels interpenetrate. An analogy is therefore justified when it does not merely name this order symbolically, but also renders it operationally visible.

3. Philosophical Foundation: Analysis, Synopsis, and Synthesis

The epistemological core of this project lies in a threefold movement of analysis, synopsis, and synthesis. C.D. Broad[2], who distinguished these three modes of knowing. Analysis clarifies how a process is internally structured within one domain; synopsis holds several domains simultaneously in view; synthesis seeks to gather the discovered correspondences into a coherent metatheory.

Analysis alone is insufficient, for it yields precision while easily losing sight of structural repetition across fields. Synopsis alone is equally insufficient, since breadth without discipline quickly degenerates into loose association. Synthesis is necessary, but becomes dangerous when it is not nourished by precise analysis and careful synopsis.

For a science of analogy, this means that every comparative inquiry should ideally move through three steps. First, a process must be understood in its own terms: which functions, transitions, regulatory mechanisms, and tensions are at work? Next, a second or third process should be compared not superficially, on the basis of outward resemblance, but at the level of operational architecture: which functions correspond, which do not, and where are the limits of the comparison[3]? Only then can synthesis follow: the question whether the processes may indeed be regarded as expressions of one deeper pattern.

4. Axioms of the World Soul Metamodel

2 See "Ethics and the History of Philosophy" (1952)

3 It seems to me, that cross-paradigmatic understanding is necessary here

A science of analogy cannot proceed without an explicit ontological basis. In the underlying metamodel, this basis consists of several interconnected axioms or starting points.

The first axiom is that consciousness, or an ordering principle, is not merely a by-product of matter but plays a constitutive role in the formation of natural and psychological structures.

The second axiom is holarchy. Reality is conceived as layered and nested; higher and lower levels interpenetrate, and at each level comparable structures and tensions may recur. A process at the micro-level is therefore not simply identical to a process at the macro-level, but it may display the same ordering logic.

The third axiom is that the seven foci are not loose properties but active centres of influence. They function as transforming stations that make possible specific qualities of development, differentiation, regulation, expansion, association, and fulfilment. Developmental stages are thus the result of dominant combinations of foci rather than the effect of any single focus in isolation.

A fourth axiom is recursivity. Each stage contains sub-stages, and the same structure may repeat itself in smaller or larger loops; in the source texts this is expressed as “wheels within wheels”. Precisely this recursivity makes analogy plausible: it helps explain why similar patterns can appear in child development, organisational growth, learning processes, and spiritual transformation without reducing these domains to one another.

5. Four Fundamental Questions for Analogical Research

From these axioms, four fundamental questions can be formulated for any analogical inquiry.

The first concerns invariants: which principles remain unchanged when a process is translated from one domain into another? Without such an invariants-analysis, comparative work remains stuck at the level of descriptive similarity.

The second asks how these principles are instantiated within a specific domain. The same function may appear in one domain as a physical field, in another as a membrane, and in a third as an institutional boundary or psychological demarcation. It is precisely at this level that the sub-principles, or semantic carriers, begin to diverge from one realm to another.

The third concerns operations and transitions. What matters is not primarily the static state, but the way in which a process moves from one phase to another. Analogy should therefore be sought above all in transitions, regulatory loops, crises, consolidations, and mechanisms of expansion.

The fourth concerns evidence. What counts as proof that the same pattern is truly present elsewhere? The provisional answer developed here is that an analogy becomes stronger insofar as it not only describes but also predicts, diagnoses, explains tensions, and reveals functional equivalences in processes across multiple domains at once.

6. Five Requirements for a Scientific Analogy

One can formulate five strict conditions that an analogy must satisfy in order to count as a scientific hypothesis. These conditions provide the backbone of the present article.

6.1 Ontological or Structural Basis

An analogy must rest upon a clearly defined model of constitutive principles. In this project, those principles are the seven foci and their mutual relations. Without such a basis, any comparison threatens to collapse into loose imagery.

6.2 Synoptic Overview of the Whole

Before comparing partial aspects, the overall pattern of both processes must be brought into view. Only then can one avoid mistaking two superficially similar fragments for a deep analogy. This requirement protects against selective confirmation.

6.3 Dynamic and Operational Mapping

A scientific analogy does not compare static objects, but sequences, transformations, and regulatory steps. The comparison thus shifts from outward form to functional anatomy. It matters more that two processes both pass through a crisis-phase, a purifying differentiation, and a critical reintegration than that they share the same visible shape.

6.4 Stabilizing Feedback Loops

Living systems cannot persist without mechanisms that dampen oscillations, guard boundaries, and restore coherence. An analogy must therefore also indicate

where the homeostatic or regulatory loops are located. Within the metamodel, this receives a clear place in and around focus 4 and in triads such as 3-4-5 and 2-4-6.

6.5 Predictive and Diagnostic Value

Finally, an analogy must be able to do something. It should help explain or predict pathologies, stagnations, or subsequent phases. An analogy that can only be fitted retrospectively is methodologically weak; one that helps reveal why an organization, a person, or a process has become stuck in a particular phase possesses genuine scientific value.

7. The Seven Foci as Functional Architecture

The seven foci may provisionally be summarized in general terms as connected with: archetype or impulse, generation, differentiation, integration, expansion, association, and fulfillment or wisdom. This sequence does not describe a rigid straight line, but an arc with a turning point near the middle, in which construction, differentiation, stabilization, and later widening follow one another: the stages in developmental processes.

An important notion is, that foci are not identical with stages. Stages display the combined influence of several foci; a focus is a working center that may operate differently in different stages. Thus focus 5 (its influence) may appear in an early phase as incipient boundary formation or analysis, and in a later phase as modularity, scalability, or higher reflection.

The seven foci must therefore be read functionally. Focus 2 concerns generative energy, order and activation; focus 3 differentiation, form, binding and discrimination; focus 4 integration, stability, feedback, and the turning point; focus 5 expansion, matrix-formation, and intelligent delimitation and communication; focus 6 association, excitation, transformation, and relational dynamics; focus 7 storage, fulfilment, or wisdom. Focus 1 represents the archetypal point of departure, or the impulse-bearing telos from which a process receives direction. The four layers of the model have been described in the first article (and later ones) on the World Soul and its seven centers of operation. The first layer comprises a Causal Field that encompasses the other layers; the second layer: a pranic [energy] Field that penetrates every form; the third layer: Form Fields and builders; the Fourth layer: combinations of influences, deepest point of the Archetypal impulse.

8. Triads as Invariant Mechanisms

The strongest candidate for invariance within the model is to be found in the triadic operations. It can be argued that these dynamic triads provide the hardest evidence for a synoptic isomorphism across levels of scale. The triads 3-4-5, 2-4-6, and 3-5-6 / 2-5-6 recur as compact operators for stabilization, homeostasis, and learning or transformation.

The 3-4-5 triad can be read as structural institutionalization and stabilization. In a physical example, it concerns quarks, the strong force, and shell-ordering; in a

biological example, the differentiation and stabilization of layers; in an organizational example, operational tasks brought through regulation into modular and scalable form. The carriers differ, but the function remains the same: elements of form are brought together, through a stabilizing middle, into enduring architecture.

The 2-4-6 triad represents operational networking and homeostasis. Here the theme is generative flow, a regulating center, and ordered energy-dynamics. In biological terms, this may be read as metabolic flow, membrane or tissue regulation, and exchange; in organizations, as norm, management control, and acute corrective action.

The 3-5-6 and 2-5-6 triads carry a different signature. They belong more to learning, adaptation, selection, and transformation. In the examples from the document, they appear in long-term potentiation and neural plasticity, but also in cultural transformation and in the Hero's Journey of organizations or persons. This yields an important thesis: learning and transformation are not accidental additions to a system, but triadically organized operators within the same architecture.

9. Syntax and Semantics: The Differentiation of Sub-Principles

One of the strongest formulations in the Science of Analogy is that the triadic operation remains invariant in its functional structure[4], while the sub-principles through which it expresses itself differentiate and mature with the domain and the

4 The triadic operations form the basis from which the VSM subsystems operate; compare the triadic role in a VSM subsystem.

developmental phase. This distinction between syntax and semantics is crucial for the validity of the analogy-hypothesis.

Without this distinction, one would be forced to claim that a cell membrane, a psychological boundary, and an organizational governance structure are literally the same thing. They are not. What can be defended is that, in their respective domains, they fulfill an equivalent function: they delimit, select, regulate, and create the conditions for stable exchange.

In this connection, the literature[5] distinguishes several "rounds" or developmental cycles and levels. In the atomic world, the sub-principles express themselves as geometrical or physical forces; in the cellular world, as metabolic and homeostatic processes; in the animal domain, as sensori-motor capacities, drives, and learning; in the human mind, as meaning-making, ethics, reflection, and transformation. It is precisely because the same functional operator clothes itself differently at each of these levels that analogy becomes possible without reductionism.

10. Functional Anatomy of Developmental Processes

When the seven foci and triads are read together, a general functional anatomy of developmental processes comes into view. Many processes begin with an impulse or archetypal orientation, followed by generative activation and the release of energy or material. Differentiation then appears: elements are distinguished, roles or functions are split out, and a first form becomes visible.

5 See the World Soul, parts one and five, where I sketch biological development/evolution from a holistic perspective.

This is followed by a critical phase of integration and stabilization. In many examples, this is the turning point of the process, because the earlier differentiation must there be gathered into a workable and self-maintaining pattern. After that, new possibilities arise for expansion, modularity, and network-formation. Later still, the emphasis shifts toward association, mutual influence, and embedding in a wider ecosystem (a qualitative shift in the social order).

Finally, a phase of fulfilment, memory, or wisdom appears. This need not be read only in spiritual terms; it may also refer to the conservation of experience, the emergence of a stable identity, the availability of a pattern for later cycles, or the ability to transmit what has been acquired.

11. Illustration I: Enterprise Development (Lievegoed)

The article on the seven foci[6] uses Bernard Lievegoed's model as one of the first illustrations of the sevenfold arc. The pioneer phase, differentiation phase, integration phase, and association phase of an organization can be projected onto the arc, while an additional expansion phase is inserted between integration and association.

In this mapping, phase 1 corresponds to the initial idea or inspiring principle; phase 2 to pioneering energy and the activation of relations and resources; phase 3 to differentiation and specialization; phase 4 to operational integration; phase 5 to scaling and modularity; and phase 6 to association and external collaboration.

6 See my first article on the World Soul and its centers of operation (archive.org, academia.edu).

Phase 7 is then read as fulfillment of the mission, preservation of experience, repurposing, or the ending of the company in a broader sense.

What makes this illustration strong is not only the sequence itself, but the functional equivalence. The pioneer phase is not merely "like" generative energy; in organizational terms it is the generative activation of resources, relations, and motives. Likewise, the differentiation phase is not merely comparable to formation, but the concrete institutional expression of differentiation, role-fixation, and form-giving within a social system.

12. Illustration II: The Hero's Journey

In the same document, Campbell's Hero's Journey is consistently read as a process unfolding along the same arc as enterprise development and other trajectories of transformation. Here, function matters more than terminology.

The call to adventure and the crossing of the threshold correspond to an initial phase of excitation, separation from the old, and activation of a transformative process. The road of trials corresponds to analytic and discriminating operations in which allies, enemies, temptations, and learning experiences are distinguished and processed. The reception of the boon, or the encounter with the source, represents the arrival of a new pattern or new energy.

The return with what has been gained is then a textbook example of the integration phase. It is precisely here that one sees whether an acquired insight can truly be embedded in ordinary structure. The hero who becomes master of two worlds finally represents the phase of stabilised wisdom or fulfilment, in

which experience has not only been undergone, but embodied and rendered transmissible.

13. Illustration III: Alchemical Transformation

Alchemy functions in the text as a third domain in which the same functional logic becomes visible. Nigredo, albedo, rubedo, and the Philosopher's Stone are not treated as exotic symbols, but as operations within a process of transformation.

Nigredo stands for crisis, breakdown, confusion, or radical destabilization of the old form. In functional terms, this is the separation of an earlier stability driven by Mars, or focus 6, and required in order to set a new process in motion. Albedo adds analysis, purification, discrimination, and refinement, by means of which elements are separated and ordered.

Rubedo represents the critical reintegration of what has been purified, comparable to the return or integration phase in other processes. The Philosopher's Stone does not then stand merely for an end-product, but for a state in which the transformed pattern has become stable, operative, and reproductive.

14. Illustration IV: Child Development from Baby to Adult

The mapping from baby to adult (Appendix A) shows that the foci-model is applicable not only to mythological or organizational processes, but also to human development. The analysis distinguishes seven broad stages: babyhood, early childhood, rule- and role-formation, puberty, young adulthood, autonomy or vision-logic, and mature wisdom.

What matters here for the science of analogy is that the same functional arc remains visible while the content changes completely. In stage 1, basic impressionability and the absence of a stable self-other distinction dominate; in stage 2, impulsivity and emotional activation emerge; in stage 3, the psychic world is differentiated into roles, rules, and categories. Stage 4 forms the turning point of puberty and reconfiguration; stage 5 brings abstraction, boundaries, and formal-reflective thinking; stage 6 multiperspectival awareness and relational autonomy; stage 7 an integrated and wisdom-oriented self.

The gain of the analogy lies in learning to look at functions rather than surface content. "Integration" does not mean the same thing in an adolescent as in an organization or in alchemy, but it fulfills a comparable role: it gathers previously differentiated elements into a more stable and coherent whole.

15. Illustration V: Ego Development, Autonomy, and Value Shifts

The text on autonomy and value-systems[7] places Loevinger, Cook-Greuter, Kegan, and Spiral Dynamics in relation to the sevenfold model. Here the same architecture appears again, but now at the level of meaning-making, subject-object relations, and moral or cultural orientation.

The early stages are marked by the absence of a clear ego-boundary, by impulsivity, and by self-protection. This is followed by conformity and orientation toward group norms. In later stages, the locus of regulation shifts to a more

7 Article on the World Soul and Loevinger ego stages of development.

internal, conscientious, and self-reflective level; later still to individualistic, autonomous, and integrated forms of consciousness.

What is especially important here for the science of analogy is the role of boundaries or membranes. In this text, focus 5 is explicitly linked to intelligent boundary-formation: from absent or hard boundaries in early stages, through boundaries borrowed from the group, toward semipermeable, conscious, and ultimately flexible, relational boundaries in autonomy. This creates a very concrete analogy with biological membranes and organizational boundary-functions without reducing the domains to one another.

16. Illustration VI: Metabolism and the Processing of Ideas

A particularly illuminating analogy is that between food metabolism and the processing of thoughts or ideas. This analogy can be developed in terms of intake, breakdown, selection, conversion, integration, and waste-processing. Even though this elaboration is not supplied here as a separate source file, it fits directly into the triadic and focal logic of the present model.

Physical metabolism begins with intake and the breakdown of material, followed by selection and transport. Thereafter, substances are integrated into networks, converted, or stored, while feedback-loops regulate excess and deficiency. Cognitive processing shows a comparable architecture: raw impressions are taken in, analyzed, selected through attention and valuation, converted into new schemas, and finally embedded in an operative self- and world-image.

The analogy becomes especially strong where both domains depend on homeostasis and boundary-guarding. A cell cannot sustain metabolism without membrane-intelligence; a psyche cannot sustain coherent development without selective intake, powers of discrimination, and boundary-formation. The difference lies in the carriers, not in the functional architecture.

17. Illustration VII: Hemispheres, Phase 5, and the Leap to Phase 6

One can tentatively connect the transition from phase (stage) 5 to phase (stage) 6 on the arc development with the hemispheric asymmetry described by Iain McGilchrist.[8] In this interpretation, phase 5 represents the dominance of the analytic, modularizing, protocol-sensitive mode; phase 6 requires a more open, associative, and context-sensitive mode of functioning.

The core of the diagnosis is that systems in phase 5 easily become rigid. What was once necessary for professionalization and structuring can later become an obstacle to relational openness and adaptive coherence. This provides an important example of predictive and diagnostic value: the model helps explain why individuals and organizations can become highly competent in structuring and yet, for precisely that reason, struggle to make the next developmental move.

Methodologically, this passage is interesting because it shows that analogy concerns not only similarity, but transition-problems. The difficulty of moving from phase 5 to phase 6 appears in psychological, organizational, and perhaps

8 His books “The Master and his Emissary” and “The Matter with Things” deal with this hemispheric asymmetry

neurological terms as the same structural problem: how does a once successful form become transparent enough to make room for a wider and more relational pattern?

18. The Tetralemma and the Place of Paradox

Appendix D refers to a 2x2 matrix and to the dynamics of the tetralemma. Although the technical details need not all be repeated here, the relevant conclusion is that the different truth-positions, or positional forms, are not external to the sevenfold arc, but help articulate it. (This has to be analyzed and discussed at a later time)

One important correction in the material is that the fourth position of the tetralemma should not be placed too early in the process. Position III may remain active through phase 5, whereas position IV only fully lights up in phases 6 and 7, where the grip of purely formal oppositions begins to loosen. This has consequences for the science of analogy, because it shows that not every "paradoxical" formulation is already genuinely post-formal. (Compare the previous section with this correction).

Here again a functional equivalence appears. In logical structures, psychic development, and organizational growth alike, there is a phase in which analytic complexity increases without the form itself yet being transcended. Only in later stages does a relational or integral mode become possible in which oppositions are not simply solved, but placed within a wider field.

19. What Makes Two Processes Truly Analogous?

The illustrations discussed above show that analogy in this framework does not rest on superficial similarity of content. Enterprise development, heroic myth, alchemy, child development, and ego-growth all involve entirely different materials, actors, and aims. What makes them analogous is that they pass through similar ordering functions and encounter comparable problems of boundary-formation, differentiation, crisis, integration, expansion, and wisdom.

This means that analogy is not primarily a comparison of objects, but of operators. The question is not whether an organization resembles a hero. The question is whether a crisis-operator appears in both cases, breaking open the old pattern, followed by a discrimination-operator, an integration-operator, and a stabilization- or transmission-operator. The more such operators recur in a comparable sequence and with comparable functional necessity, the stronger the analogy.

An additional criterion is recursivity. When the same logic can be recognized not only in the whole, but also in sub-phases or subsystems, the hypothesis gains credibility. This is precisely why the phrase “wheels within wheels” is more than a metaphor; it names a method for investigating whether the pattern mirrors itself across levels.

20. Limits and Pitfalls of Analogical Research

No science of analogy is credible without attention to its own limits. A first pitfall is overextension: too quickly assuming an analogy because two processes seem to share a broad sequence. Many processes have a beginning, middle, and end; that alone is no proof of deep correspondence.

A second pitfall is semantic confusion. One may easily forget that the same function is carried by different sub-principles in different domains. As soon as these differences are ignored, one risks an inverse form of reductionism: not everything is reduced to matter, but to symbolism.

A third pitfall is confirmation bias. Whoever strongly believes in a metamodel will easily see the same pattern everywhere. This is why the previously formulated criteria of synoptic comparison, dynamic mapping, and predictive value are so important. They force attention toward disanalogies, lacunae, and boundary-cases as well.

21. Diagnostic and Predictive Power

One of the most interesting claims of the model is that analogies can be diagnostically productive. If the same functional architecture is at work in multiple domains, insights from one domain may help reveal disturbances in another. One may then ask, for example, whether an organization stuck in excessive structuring functionally resembles a psychic system that no longer leaves room for association and flexibility.

Predictive value also becomes possible. If a process is in a crisis- or differentiation-phase, one may expect integration, at some point, to become the central task; if a

system can build modules but fails to reach relational openness, stagnation around the transition from phase 5 to phase 6 becomes likely. Such predictions are not yet experimental laws in the strict natural-scientific sense, but they go beyond purely rhetorical comparison.

The fertility of the model will therefore show itself above all in repeated case studies. Each time the foci-architecture helps identify a transition, blockage, or developmental opportunity that would otherwise have remained obscure, the analogy-hypothesis gains plausibility.

22. Towards a Research Program

If the science of analogy is to become more than an inspiring essayistic perspective, it must grow into a research program. Such a program would need to contain at least three tracks.

First, tighter case studies are needed. For each domain, processes must be described as precisely as possible in terms of phase-transitions, triadic operations, feedback-loops, and boundary-functions. This also includes explicitly naming misfits and exceptions.

Second, systematic comparison is needed. Not three loose examples, but matrices of domains in which one investigates which operators are truly equivalent and where the pattern diverges. It is precisely such comparative tables that can make the synoptic step sharper and less impressionistic.

Third, the diagnostic and predictive power must be tested. Can the model better explain why certain organizations stagnate, why certain psychological transitions are difficult, or why some developmental arcs repeatedly become stuck around the same hinge-points? Where such applications prove fruitful, the science of analogy acquires a firmer empirical status.

23. Conclusion

The science of analogy developed here attempts to open a middle way between reductionism and loose symbolism. It argues that analogous processes can be studied scientifically when one focuses on functional architecture: on invariants of differentiation, regulation, integration, expansion, association, and fulfillment, rather than on superficial similarity of content.

Within the World Soul metamodel, these invariants are described in terms of seven foci, four layers and recurring triadic operations. The central hypothesis is that the same functional syntax is at work in widely differing domains, while the sub-principles, or semantic carriers, vary from one realm and developmental phase to another. The illustrations from organizational development, the Hero's Journey, alchemy, child development, ego development, and psychic transformation show that this hypothesis is at least fertile, internally coherent, and methodologically developable.

This does not yet amount to definitive proof. Yet the hypothesis acquires sufficient coherence, precision, and heuristic power to function as a serious research program. The strongest defense of a science of analogy lies ultimately not in

abstract claims, but in its ability to structure processes clearly, make blockages visible, and connect different fields of knowledge within one coherent, non-reductionist image.

Appendix A: Child Development from Baby to Adult

The phase-transitions from baby to adult display the same universal pattern as enterprise development, the Hero's Journey, alchemy, and ego-identity. This confirms the functional analogy in yet another fundamental domain: biological-psychological development.

A parallel view of the pattern may be sketched as follows:

Stage	Enterprise	Hero's Journey	Ego (Loevinger)	Baby to Adult
1. Archetype/Purpose	Initial idea	Deep calling	E1 Presocial	Baby: archetypal imprint upon the body; no visible ego-differentiation
2. Generation	Pioneer networking	Gathering allies	E2-E3 Impulsive / Self-protective	Early childhood: impulse, basic emotions, hard impermeable boundary

3. Differentiation	Differentiation phase	Road of Trials	E4 Conformist	Later childhood: rules, roles, categorical thought, self-other boundaries
4. Integration (Turn)	Integration phase	The Return	E5 Self-Aware	Puberty: hormonal reorganization, identity-questions, new integration
5. Expansion	Franchising / Scaling	Applying wisdom	E6 Conscientious	Late adolescence: abstract thought, metacognition, semipermeable boundaries
6. Association	Partner-ships / Ecosystem	Master of Two Worlds	E7-E8 Individualistic / Autonomous	Mature autonomy: multiperspectival awareness, flexible boundaries, interdependence
7. Fulfilment	Corporate wisdom	Freedom to Live	E9 Integrated	Mature adulthood: crystallised intelligence, generativity, transpersonal orientation

The functional equivalence of the stages can be expressed more fully. In stage 1 there is an archetypal imprint: a potential pattern[9] that has not yet taken explicit form. In stage 2, raw energy is mobilized and primitive boundaries are drawn. In stage 3, form emerges through rule, distinction, and conformity to external structure.

Stage 4 is the universal turning point, and puberty is perhaps its clearest biological manifestation. At this stage, an earlier order loses stability, while a new integration begins to seek itself around the question of identity. In the enterprise, this corresponds to cross-functional integration; in the hero-myth, to the difficult return; in alchemy, to rubedo; in ego-development, to the emergence of a first personal membrane distinct from the group.

Stage 5 brings abstract thought and expansion. Stage 6 brings autonomy and interdependence. Stage 7 brings wisdom and generativity, where life-experience is no longer merely accumulated, but integrated and transmitted. The boundary-function evolves accordingly: from no boundary, to a hard wall, to group-boundary, to personal boundary, to intelligent membrane, to flexible relational boundary, and finally to a transparent but not dissolved boundary.

Appendix B: Triadic Operations Across Stages and Phases

The triadic operations can be functionally linked to specific stages because different triads become dominant in different developmental phases. A condensed mapping may be given as follows:

9 The physical form is present, in the case of the baby, but its psychological functions have not shown themselves in full differentiation

Stage	Dominant Triads	Functional Role
1. Archetype / Purpose	1-2-7, 1-4-7	Direction, telos, and the closure of the whole cycle
2. Generation	2-3-6, 2-4-6	Generative impulse, first structuring, energetic exchange
3. Differentiation	3-4-5, 2-3-4	Stabilization of structure, normative ordering
4. Integration	1-4-7, 2-4-6, 3-4-5	Double regulation at the turning point; robust stabilization
5. Expansion	3-5-6, 2-5-6	Learning, pattern-fixation, transformation
6. Association	3-5-6, 2-4-6	Adaptive learning and dynamic networking; Qualitative jump in social interaction
7. Fulfilment	1-4-7, 3-5-7, 4-5-7	Wisdom, reflective consolidation, contextual integration

In early stages, telos-triads and generative triads dominate. At the turning point, double regulation comes to the fore: 3-4-5 detects disharmony and makes it explicit, while 2-4-6 establishes revised norms and drives corrective action. In later stages, learning-triads and reflective triads increasingly organize the process.

This also explains why development is not linear, but recursive. The same triads return at higher levels: what appears in stage 5 as analytic abstraction may return in stage 6 as systemic, multiperspectival learning. "Wheels within wheels" is therefore not a decorative phrase, but a structural law of repetition across scales.

Appendix C: Neurobiological and Evolutionary Extensions

To test the universal scope of the Science of Analogy, the triadic operators must also be scaled upward and downward: toward neurobiology, embryology, and macro-evolutionary adaptation.

C.1 Macro-Evolutionary Adaptation

When a species is confronted with a radically changing environment, the invariant cybernetic syntax repeats itself at the macro-level, while the sub-principles transform into the language of genetics, epigenetics, and natural selection. The species may then be viewed as a collective viable system. Its archetypal blueprint, adaptive variation, stabilizing species-boundary, and living population correspond to different systemic functions within one larger holarchy.

The 3-5-6 triad becomes visible here as an adaptation-triad in evolutionary crisis. The existing phenotype runs up against a new ecological reality; stress, lowered fertility, or mass mortality signal the inadequacy of the old form. Variation then increases through hidden or newly activated possibilities[10], while the environment

10 Always keep in mind that an entity, be it an organism or otherwise, tries to express and expand its innate characteristics, called Svabhava (Sanskrit, lit. "self-becoming") in the wisdom tradition

itself acts as the severe selective force that cuts away no-longer-viable patterns. Once the transition succeeds, stabilization consolidates the new norm.

C.2 Embryonic Germ Layers

During gastrulation, a uniform sphere of stem cells differentiates into the three primary germ layers. This process mirrors the 3-4-5 triad in exemplary fashion. Endoderm may be read as the metabolic substrate; mesoderm as the stabilising interface and transport-regulator; ectoderm as the information-interface with the world.

As an aside: in jellyfish (Coelenterates), there is no real mesoderm but a mesoglea. Only later in evolution, a true mesoderm develops. This is a fact to research further: does the third stage in a process show some basic integration and stabilization, while the fourth stage shows a further stabilization, involving sophisticated feedback loops?

In the human domain, the ectodermal hardware reaches its top-down culmination in the enormous expansion of the neocortex. Higher mental governance does not bypass biology, but works through a cascade: neocortex, limbic system, diencephalon, brainstem, autonomic nervous system. Through this layered neural hierarchy, higher cognition directs and refines lower metabolic and instinctive processes.

C.3 The Universal Transformation Loop

When ordinary 2-4-6 homeostasis fails because the external crisis is too large, systems shift into the 3-5-6 learning-triad: form under stress, analytic scanning,

transmuting action. In the cell, this appears as toxic disturbance, molecular scanning, and heat-shock response. In the plant, as drought stress, recalculation of moisture balance, and radical stomatal or root adaptation. In the organization, as cultural burnout, strategic analysis, and forceful restructuring.

The same can be said of the human psyche. A trauma or existential crisis breaks open rigid cognitive frames; the analytic mind weighs new possibilities; disciplined will then melts old ego-patterns into a more integrated stability. In that sense, the metabolism of thought is not merely a metaphor, but a real functional analogue of biological adaptation.

C.4 Renewed Conclusion: Trimurti and Telos-Triads

The universal syntax of the World Soul may be read through three major triads, personified in Eastern cosmology as the Trimurti. The breath of Brahma roughly corresponds to 2-3-6 (generative triad) and 3-4-5, the structural architecture that creates hardware and layered order. The gaze of Vishnu corresponds to 2-4-6, operational regulation and the maintenance of viable homeostasis. The dance of Shiva corresponds to 3-5-6, the transforming power of creative destruction that breaks open forms when they have become too rigid to live. These are obviously raw mappings, but nevertheless suggestive.

Behind these cycles move the telos-triads. They provide the immanent vector of the future, ensuring that the cycle does not remain a closed mechanism but unfolds as an ascending spiral. Telos draws structure toward destiny, gradually

raises the homeostatic norm, and ensures that destruction remains creative destruction, directed toward a new phase of translucence and harmony.

Appendix D: Tetralemma and Positional Logic

The tetralemma (see below) material serves to clarify the place of paradox and positional logic within the sevenfold arc. Its chief methodological value lies in showing that not every move beyond binary opposition is already integral or post-formal. (to be analyzed further elsewhere).

Position III may remain active well into phase 5, where complexity increases but the hold of form remains strong. Position IV only becomes fully luminous in phases 6 and 7, where oppositions are no longer merely managed within form, but held within a wider relational field. This has important consequences for analogical inquiry, since it sharpens the distinction between advanced complexity and genuine transcendence of formal opposition.

The tetralemma therefore does not stand outside the developmental arc; it maps a logic of positional maturation within it. Used carefully, it can help distinguish between analytic sophistication, paradoxical formulation, and genuinely integral awareness.

More on the tetralemma

The tetralemma is a fascinating conceptual tool because it bridges two vastly different worlds: **ancient Eastern logic** (where it is known as the *Catuskoti*) and **modern systems thinking/conflict resolution**.

Depending on which angle one wants to explore, excellent discussions and analyses can be found across several distinct fields:

1. The Philosophical & Logical Angle (The *Catuskoti*)

If one wants to dive into the roots of the tetralemma as a framework that challenges standard Western binary logic (the law of the excluded middle), look into **Madhyamaka Buddhist philosophy**:

- **The Stanford Encyclopedia of Philosophy (SEP):** Search for their entries on **Nāgārjuna** or **Analytic Philosophy and Buddhist Logic**. The SEP offers rigorous, peer-reviewed breakdowns of how the four positions—*Affirmation, Negation, Both, and Neither*—operate without collapsing into mere contradiction.
- **Graham Priest (*Beyond True and False* / *The One*):** Priest is a world-renowned logician specializing in non-classical and paraconsistent logic. He has written extensively on how the tetralemma can be understood through modern mathematical logic. His articles and lectures (many available on YouTube or academic repositories) offer a brilliant bridge between ancient thought and contemporary philosophy of logic.
- **Jan Westerhoff (*Nāgārjuna's Madhyamaka: A Philosophical Introduction*):** This book provides one of the clearest analytical discussions on how the tetralemma acts as a tool to dismantle dogmatic metaphysical assumptions, examining its structure through a precise, modern philosophical lens.

2. The Systemic & Decision-Making Angle

If one is interested in how the tetralemma is used practically to break through binary gridlocks ("Either/Or" dilemmas) in organizations, relationships, or creative problem-solving:

- **Matthias Varga von Kibéd & Insa Sparrer (SySt):** They integrated the tetralemma into **Systemic Structural Constellations**. They expanded the traditional four corners by adding a **fifth position**: *"None of these, and not even that"* (a state of radical transcendence or the double negation).
    - *Where to look:* Their book *Ganz im Gegenteil* is the definitive text (if you read German). For English resources, look for papers, essays, or interviews on "**The Tetralemma in Systemic Constellations**" or "**SySt approach to decision making.**"
- **Management & Coaching Literature:** Authors like Elisabeth Ferrari have written practical guides on utilizing the tetralemma as a creative matrix to move teams beyond polarization by actively mapping out what the "Both" or "Neither" options look like in practice.

3. Podcasts & Audio Discussions

For high-quality, conversational breakdowns:

- **Philosophize This! (Episodes on Nāgārjuna):** Host Stephen West gives an accessible yet deep introduction to Eastern dialectics and how the tetralemma is used to deconstruct fixed views of reality.
- **The Partially Examined Life:** This philosophy podcast occasionally dives into Indian logic and Eastern philosophy, offering long-form, casual yet deeply informed roundtable discussions on the limitations of two-valued logic systems.